UNITED STATES DISTRICT COURT
DISTRICT OF MINNESOTA

VASCULAR SOLUTIONS LLC; TELEFLEX LLC; TELEFLEX LIFE SCIENCES LLC; and ARROW INTERNATIONAL LLC,

Plaintiffs,

v.

MEDTRONIC, INC. and MEDTRONIC VASCULAR, INC.,

Defendants.

No. 19-cv-1760 (LMP/SGE)

ORDER ON CLAIM CONSTRUCTION AND SCHEDULE

J. Thomas Vitt, Sanjiv P. Laud, and Lucien Wang, **McCurdy Laud, LLC, Minneapolis, MN**; and J. Derek Vandenburgh, Tara C. Norgard, Joseph W. Winkels, and Seung Sub Kim, **Carlson Caspers**, **Minneapolis, MN**, for Plaintiffs.

Kurt J. Niederluecke, Laura L. Myers, Barbara Marchevsky, **Fredrikson & Byron, P.A., Minneapolis, MN**; Cara S. Donels, **Fredrikson & Byron, P.A., Des Moines, IA**; and Gregory Hayes Lantier, **Wilmer Cutler Pickering Hale and Dorr LLP, Washington, D.C.**, for Defendants.

Plaintiffs Vascular Solutions LLC, Teleflex LLC, Teleflex Life Sciences LLC, and Arrow International LLC (collectively "Teleflex") brought this patent-infringement lawsuit accusing Defendants Medtronic, Inc. and Medtronic Vascular, Inc. (collectively "Medtronic"), of infringing a family of Teleflex's patents relating to a guide-extension catheter. Currently before the Court is claim construction of the term "substantially rigid portion/segment." For the reasons below, the Court construes "substantially rigid portion" to mean: the first proximal section of a multipart guide extension catheter that is rigid enough to allow the device to be advanced within the guide catheter.

BACKGROUND

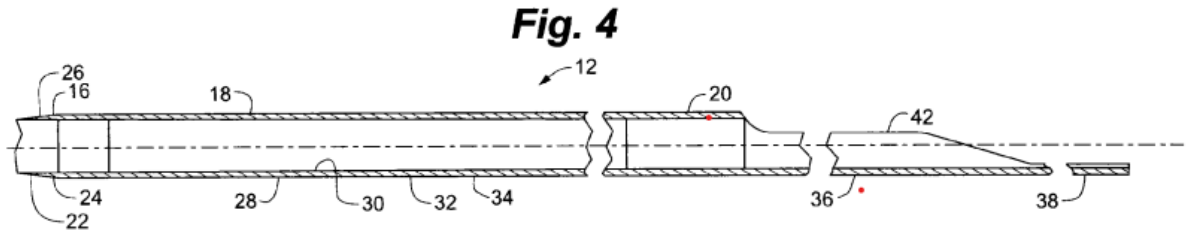
On May 3, 2006, Teleflex filed U.S. Patent Application No. 11/416,629 (the '629 application) for a coaxial guide catheter used in interventional cardiology procedures, referred to as a "guide extension catheter" ("GEC").[1] A GEC "is used by a heart surgeon to deliver an interventional cardiology device (such as a balloon or stent) into a coronary artery." *QXMédical, LLC v. Vascular Sols., LLC*, No. 17-cv-1969 (PJS/TNL), 2018 WL 5617568 at *1 (D. Minn. Oct. 30, 2018). In 2011, the '629 application issued as U.S. Patent No. 8,048,032 (the '032 patent). ECF No. 575-2. Teleflex then sought and was granted additional patents descending from the '629 application: U.S. Patent No. 8,142,413 (the '413 patent); U.S. Patent No. RE45,380 (the '380 patent); U.S. Patent No. RE45,760 (the '760 patent); U.S. Patent No. RE45,776 (the '776 patent); U.S. Patent No. RE46,116 (the '116 patent); and U.S. Patent No. RE47,379 (the '379 patent) (collectively, the "Patents-in-Suit"). *Vascular Sols. LLC v. Medtronic, Inc.*, 117 F.4th 1361, 1363 (Fed. Cir. 2024) (hereinafter "Appellate Decision"). For the present stage of this litigation, Teleflex asserts

[1] The development of the GEC, the medical procedure in which it is used, and the lengthy procedural history of this case are extensively detailed in previous orders from the Honorable Patrick J. Schiltz and the Federal Circuit Court of Appeals. *See QXMédical, LLC v. Vascular Sols., LLC*, No. 17-cv-1969 (PJS/TNL), 2018 WL 5617568 (D. Minn. Oct. 30, 2018); *Vascular Sols. LLC v. Medtronic, Inc.*, No. 19-cv-1760 (PJS/TNL), 2022 WL 832102 (D. Minn. Mar. 21, 2022); *Vascular Sols. LLC v. Medtronic, Inc.*, No. 19-cv-1760 (PJS/TNL), 2022 WL 17959845 (D. Minn. Dec. 27, 2022); *Vascular Sols. LLC v. Medtronic, Inc.*, No. 19-cv-1760 (PJS/TNL), 2024 WL 95193 (D. Minn. Jan. 9, 2024); *Medtronic, Inc. v. Teleflex Innovations S.a.r.l.*, 70 F.4th 1331, 1333 (Fed. Cir. 2023); *Vascular Sols. LLC v. Medtronic, Inc.*, 117 F.4th 1361, 1363 (Fed. Cir. 2024). The Court assumes familiarity with that background and will only reference that which is relevant to this order.

claims 9, 13, and 18 of the '032 patent; claim 4 of the '413 patent; and claim 25 of the '776 patent. ECF No. 574 at 4.

Of importance here is that Teleflex's '032 patent, from which all the Patents-in-Suit descend, is a GEC described as "generally" including "a tip portion, a reinforced portion, and a substantially rigid portion."[2] '032 patent at 3:27–30. The "tip portion," represented by segment 16, includes segments 22, 24 and 26 from Figure 4. *Id.* at fig. 4, 6:14–18. The reinforced portion is represented by number 18, and includes 28, 30, and 32. *Id.* at 6:24–28. And, together, the tip and reinforced portion "form a substantially cylindrical structure." *Id.* at 6:29–30. The substantially rigid portion, on the other hand, "includes first full circumference portion 34, hemicylindrical portion 36, arcuate portion 38, and second full circumference portion 40," and "may be formed from a hypotube or a section of stainless steel or Nitinol tubing," though other materials may be used. *Id.* at 6:34–40. The substantially rigid portion was, in the past, colloquially referred to by all parties as the "pushrod." *See Vascular Sols. LLC v. Medtronic, Inc.*, No. 19-cv-1760 (PJS/TNL), 2022 WL 832102, at *3–4 (D. Minn. Mar. 21, 2022) (hereinafter "Preliminary Injunction Order") (recounting Teleflex's history of equating the "substantially rigid portion" with the pushrod).

[2] Although the claim at issue uses the phrase "substantially rigid portion," the parties and previous courts have consistently used the words "segment" and "portion" interchangeably. Appellate Decision, 117 F. 4th at 1367 (noting that both Teleflex and Medtronic have equated "'portion" or "segment'"). This Court will do the same.



'032 patent at fig. 4.

In general terms, the product contains a long "substantially rigid portion" that eventually connects to a tube; that tube, in turn, contains a side opening on the proximal side. Indeed, though the patents do not themselves contain the term "side opening," each patent claims a "side opening" at the proximal end of the substantially cylindrical structure. Appellate Decision, 117 F.4th at 1364 n.5 (noting that some of the patents use the phrase "partially cylindrical" to describe the side opening while others use the phrase "hemicylindrical portion").

I. Initial Claim Construction and Finding of Invalidity

In April 2017, QXMédical, LLC ("QXMédical"), which produced and sold its own GEC, brought a declaratory judgment action against Teleflex seeking a judgment that its GEC did not infringe any of Teleflex's patents. *See QXMédical,* 2018 WL 5617568, at *1. During the early stages of that litigation—which remains pending—the court was asked to define "substantially rigid" within the context of "substantially rigid portion," and defined it as "rigid enough to allow the device to be advanced within the guide catheter." *Id.* at *5.

In 2019, Medtronic entered the GEC market. *Medtronic, Inc. v. Teleflex Innovations S.a.r.l.*, 70 F.4th 1331, 1335 (Fed. Cir. 2023). Teleflex brought this suit soon after, alleging that Medtronic's GEC infringed its patents. Appellate Decision, 117 F.4th at 1366. During the present litigation, claim construction evolved from defining the phrase "substantially rigid," to defining the phrase "substantially rigid *portion.*" *Id.* at 1367 (emphasis added). This has, ultimately, led to the lengthy litigation in this case because while "substantially rigid" proved simple enough to define, defining the "portion" of a device that was "substantially rigid" has proven more difficult.

The issue is that—although every patent secured by Teleflex includes a substantially rigid portion—the claimed substantially rigid portion has evolved through Teleflex's seven patent applications. Specifically, the patents differ as to how the substantially rigid portion interacts with other aspects of the device, particularly the side opening. *Id.* at 1364 ("The asserted claims differ as to how they disclose the side opening."). Most of the Patents-in-Suit claim the side opening to be within the "substantially rigid portion." For example, claim 1 of the '032 patent, from which claim 9 depends, claims the following:

> A device for use with a standard guide catheter, . . . the device comprising:
>
> a flexible tip portion defining a tubular structure having a circular cross-section and a length that is shorter than the predefined length of the continuous lumen of the guide catheter, the tubular structure having a cross-sectional outer diameter sized to be insertable through the cross-sectional inner diameter of the continuous lumen of the guide catheter and defining a coaxial lumen having a cross-sectional inner diameter through which interventional cardiology devices are insertable; and

> a substantially rigid portion proximal of and operably connected to, and more rigid along a longitudinal axis than, the flexible tip portion and defining a rail structure without a lumen and having a maximal cross-sectional dimension at a proximal portion that is smaller than the cross-sectional outer diameter of the flexible tip portion and having a length that, when combined with the length of the flexible distal tip portion, defines a total length of the device along the longitudinal axis that is longer than the length of the continuous lumen of the guide catheter, such that when at least a distal portion of the flexible tip portion is extended distally of the distal end of the guide catheter, at least a portion of the proximal portion of the substantially rigid portion extends proximally through the hemostatic valve in common with interventional cardiology devices that are insertable into the guide catheter.

'032 patent at 10:21–54. Claim 9, which Teleflex asserts here, further claims:

> The device of claim 1 wherein the substantially rigid portion *includes* from distal to proximal direction, a cross-sectional shape having a full circumference portion, a hemicylindrical portion and an arcuate portion.

Id. at 11:21–24 (emphasis added). Claim 9 thus requires that the side opening—the "hemicylindrical portion"—be included within the substantially rigid portion.

Claim 11 of the '032 patent, from which the now-asserted claims 13 and 18 depend, defines a three-part device and claims the following:

> A device for use with a standard guide catheter, . . . the device comprising:
>
> an elongate structure having an overall length that is longer than the predefined length of the continuous lumen of the guide catheter, the elongate structure including:
>
> a flexible tip portion defining a tubular structure having a circular cross-section that is smaller than the circular cross-section of the continuous lumen of the guide catheter and a length that is shorter than the predefined length of the continuous lumen of the guide catheter, the flexible tip portion being sized having a cross-sectional outer diameter sized to be insertable through

> the cross-sectional inner diameter of the continuous lumen of the guide catheter and defining a coaxial lumen having a cross-sectional inner diameter through which interventional cardiology devices are insertable;
>
> a reinforced portion proximal to the flexible tip portion; and
>
> a substantially rigid portion proximal of and connected to, and more rigid along a longitudinal axis than, the flexible tip portion and defining a rail structure without a lumen and having a maximal cross-sectional dimension at a proximal portion that is smaller than the cross-sectional outer diameter of the flexible tip portion.

Id. at 11:28–57. Claim 13 refines claim 11 and claims the following:

> The device of claim 11 wherein *the substantially rigid portion further includes* a partially cylindrical portion defining an opening extending for a distance along a side thereof defined transverse to a longitudinal axis that is adapted to receive an interventional cardiology device passed through continuous lumen of the guide catheter and into the coaxial lumen while the device is inserted into the continuous lumen, the opening extending substantially along at least a portion of a length of the substantially rigid portion.

Id. at 12:12–20 (emphasis added). Claim 18 also refines claim 11:

> The device of claim 11 wherein *the substantially rigid portion includes*, starting at a from distal to proximal direction, a cross-sectional shape having a full circumference portion, *a* hemicylindrical portion and an arcuate portion.

Id. at 12:39–42 (emphasis added). Both claims 13 and 18, then, likewise require that the side opening be within the substantially rigid portion.

Claim 1 of the ’413 patent, from which claim 4 depends, claims the following:

> A method of providing backup support for an interventional cardiology device . . . the method comprising:

> inserting a flexible tip portion of a coaxial guide catheter defining a tubular structure having a circular cross-section and a length that is shorter than the predefined length of the continuous lumen of the standard guide catheter, into the continuous lumen of the standard guide catheter, and,
>
> further inserting a substantially rigid portion that is proximal of, operably connected to, and more rigid along a longitudinal axis than the flexible tip portion, into the continuous lumen of the standard guide catheter, the substantially rigid portion defining a rail structure without a lumen and having a maximal cross-sectional dimension at a proximal portion that is smaller than the cross-sectional outer diameter of the flexible tip portion and having a length that, when combined with the length of the flexible distal tip portion, defines a total length of the device along the longitudinal axis that is longer than the length of the continuous lumen of the guide catheter;
>
> advancing a distal portion of the flexible tip portion distally beyond the distal end of the standard guide catheter and into the second artery such that the distal portion extends into the second artery and such that at least a portion of the proximal portion of the substantially rigid portion extends proximally through the hemostatic valve.

'413 patent at 10:28–67. And claim 4 claims:

> The method as claimed in claim 1, further comprising selecting the substantially rigid portion of the coaxial guide catheter such that it *comprises a cylindrical portion and a partially cylindrical portion defining an opening along a side thereof.*

Id. at 11:18–22 (emphasis added). Claim 4 thus requires that the substantially rigid portion of the device include the side opening.

On the other hand, claim 25 of the '776 patent places the side opening separate from the substantially rigid portion. Claim 25 claims:

> A guide extension catheter for use with a guide catheter, comprising:

> a substantially rigid segment;
>
> a tubular structure defining a lumen and positioned distal to the substantially rigid segment; and
>
> a segment defining a *partially cylindrical opening positioned between a distal end of the substantially rigid segment and a proximal end of the tubular structure*, the segment defining the partially cylindrical opening having an angled proximal end, formed from a material more rigid than a material or material combination forming the tubular structure, and configured to receive one or more interventional cardiology devices therethrough when positioned within the guide catheter.

'776 patent at 13:36–49 (emphasis added). This claim, therefore, contemplates that the side opening be separate and distinct from the substantially rigid segment. Appellate Decision, 117 F.4th at 1364 (explaining that claim 25 of the '779 patent "recite[s] the side opening as separate and distal to the substantially rigid portion/segment").[3] For convenience, the parties referred to the claims where the side opening is in the "substantially rigid portion" as "Group One" claims, and those where the side opening is separate from the substantially rigid portion as "Group Two" claims. Appellate Decision, 117 F.4th at 1367.

At claim construction of the term "substantially rigid portion," Teleflex attempted to work around the inconsistency between Group One claims and Group Two claims by breaking down "substantially rigid portion" into component parts and defining the phrase

[3] Notably, although claim 25 of the '776 patent is the only claim currently asserted by Teleflex that requires the side opening be separate from the substantially rigid portion, it is not the only claim within the seven patents that does so. *See, e.g.*, '776 patent, claim 52; '380 patent, claim 27.

"substantially rigid" as "rigid enough to allow the device to be advanced within the guide catheter," ECF No. 441 at 13, and "portion" as "longitudinal section," *id.* at 7, 10. Medtronic, on the other hand, argued that "substantially rigid portion" meant "portion/segment of the device acting as a pushrod." ECF No. 451 at 7.[4]

The Court, not satisfied with either definition, appointed an independent expert. *Vascular Sols. LLC v. Medtronic, Inc.*, No. 19-cv-1760 (PJS/TNL), 2024 WL 95193, at *4 (D. Minn. Jan. 9, 2024) (hereinafter "Invalidity Order"). The expert, in turn, rejected both parties' suggested definitions and defined "substantially rigid portion" as:

> [T]he first proximal section of a multi-section guide extension catheter, that ends where there is a material drop in the overall rigidity of the guide extension catheter at or distally to the proximal end of the coaxial lumen where an interventional cardiology device is inserted.

Id. at *5. Under the expert's definition, the side opening *must* be within the substantially rigid portion because the substantially rigid portion ends only after connecting or passing the portion of the device where the lumen begins. *Id.* ("As the parties agree, the expert's construction requires that the side opening be *in* the substantially rigid portion."). In grappling with the expert's definition, Teleflex largely urged the Court to adopt it even though the construction conflicted with its Group Two claims specifying that the "side opening" be separate from the substantially rigid portion. ECF No. 499 at 9–10. Medtronic, on the other hand, argued that because the expert's definition necessarily

[4] Chief Judge Schiltz informally defined a pushrod to be "the portion of the device that transmits the force of the user's push to the rest of the device, allowing the rest of the device to advance through the guide catheter." Preliminary Injunction Order, 2022 WL 832102, at *3 (D. Minn. Mar. 21, 2022). Neither party has proposed a different definition.

rendered claim 25 of the '776 patent (and other non-asserted claims) invalid, the expert's opinion should be rejected and the claims found indefinite. ECF No. 487 at 9–10.

Chief Judge Schiltz ultimately agreed with Medtronic. Invalidity Order, 2024 WL 95193, at * 5. He criticized all proposals as ultimately unworkable. For instance, Teleflex's definition of substantially rigid portion would allow the substantially rigid portion to "shrink[] or grow[] depending on whether the claim at issue places the side opening within or outside of the substantially rigid portion." *Id.* at *3. In essence, Teleflex's definition was nonsensical because it "could result in the same device *simultaneously* infringing *mutually exclusive* claims." *Id.* But Medtronic's definition, on the other hand, would require further briefing on what, precisely, the pushrod is, because all portions of the device work to push some other portion of the device. *Id.* at *4. Medtronic's "pushrod" definition might also be inconsistent "with various aspects of the specification." *Id.* And the expert's definition did not work because it would "render nonsensical multiple claims in the patents." *Id.* at *5. In short, Chief Judge Schiltz could not find a definition of substantially rigid portion that worked for all the claims and therefore found the term indefinite and the claims invalid. *Id.* at *8. The parties thereafter stipulated to final judgment, and Teleflex appealed. Appellate Decision, 117 F.4th at 1368.

II. Appeal to the Federal Circuit

The Federal Circuit vacated the Invalidity Order and remanded for further claim construction proceedings. *Id.* at 1363. That brings us to where we are now. The Appellate Decision did not provide its own construction of substantially rigid portion but instead provided guidance for this Court to follow on remand.

First, the Federal Circuit determined that Chief Judge Schiltz was wrong to hold that the claims were indefinite because they are "mutually exclusive." *Id.* at 1369–70. This was error, according to the Federal Circuit, because claims can "vary in the way they claim the disclosed subject matter" and because independent claims do not have to "be totally consistent with other independent claims." *Id.* at 1370. Even if some claims place the side opening *within* the substantially rigid portion and some place the side opening *distal* to the substantially rigid portion, that does not mean that the term substantially rigid portion cannot be construed. On remand, the Federal Circuit directed this Court to "conduct claim construction on a claim-by-claim basis with the understanding that, at the claim construction stage, the claims are not necessarily 'mutually exclusive' since each independent claim is a different ordered combination of limitations." *Id.*

Second, the Federal Circuit rejected Chief Judge Schiltz's reasoning that "the boundary of the 'substantially rigid portion/segment'" had to be "consistent across claims" because that reasoning presumed that the substantially rigid portion was a structural term as opposed to a functional one. *Id.* Critically, the court held that the term "'substantially rigid portion/segment' . . . is a functional limitation, meaning the substantially rigid portion is a portion of the catheter that is substantially rigid enough to achieve some function." *Id.* (citation omitted). Consequently, "[n]o matter if the side opening is within or distal to the substantially rigid portion/segment, that portion/segment of the catheter must maintain the substantial rigidity to achieve some function—in this case, the function of allowing the device to be advanced within the guide catheter." *Id.* Nevertheless, although the *boundary* of the substantially rigid portion does not have to be *structurally* consistent across the

claims, the definition of substantially rigid portion should "be construed the same way across the patents." *Id.* This, the Federal Circuit explained, is achieved by using a "functional construction that does not specify the boundary of the 'substantially rigid portion.'" *Id.* This is because the claims themselves "indicate to a person skilled in the field how to measure the boundary, claim-by-claim." *Id.* at 1370–71.

Finally, the Federal Circuit found Medtronic's objection to a construction that "would allow the same device to infringe claims that measure the boundary differently" to be premature. *Id.* at 1371. It remanded with the note that "the asserted claims are not necessarily mutually exclusive, and the claim limitation 'substantially rigid portion/segment' does not have to have a consistent boundary across different independent claims." *Id.*

III. Arguments on Remand

On remand, the parties revisited the claim construction of "substantially rigid portion" and briefed it in light of the Federal Circuit's opinion.[5]

Teleflex's position is largely unchanged. It again asserts that the Court should construe substantially rigid portion as "a longitudinal section that is rigid enough to allow the device to be advanced within the guide catheter." ECF No. 574 at 13. Teleflex urges that its proposal best adheres to the Federal Circuit's opinion because "[i]t defines the substantially rigid portion by its function . . . 'allow[ing] the device to be advanced within

[5] Chief Judge Schiltz recused from the case on October 24, 2024, and the case was reassigned to the undersigned U.S. District Judge to "write on a clean slate." ECF Nos. 557 at 5, 560.

the guide catheter'; and it leaves the boundary of the substantially rigid portion to the other language of each claim." *Id.* at 14.

Medtronic, on the other hand, again asserts that the Court should define the phrase as a "pushrod that pushes the flexible tubular structure through the guide catheter." ECF No. 576 at 3. Medtronic's position is largely based on the fact that the substantially rigid portion and the "pushrod" have often been used interchangeably by the parties. *Id*. at 17–18.

By request of the Court, ECF No. 597, the parties also briefed whether the expert's definition—or some variation of it—was viable in light of the Federal Circuit's opinion. Neither party believes it is. Teleflex argues that the expert's opinion remains incorrect because "it sets a single distal boundary" for the substantially rigid portion that would be the same across all claims whereas the Federal Circuit held that the boundary could be determined on a claim-by-claim basis and does not encompass claims in which the side opening is distal to the substantially rigid portion. ECF No. 602 at 5–6. Medtronic argues that the expert's definition is wrong because it is structural, not functional, and that the boundary need not have a structural boundary consistent across all claims. ECF No. 603 at 4–5.

Both parties proposed alternatives to the expert's definition. Teleflex proposed "the first proximal section of a multipart guide extension catheter that is rigid enough to allow the device to be advanced within the guide catheter." ECF No. 602 at 9. That construction replaced Teleflex's earlier construction, exchanging "first proximal section" for "longitudinal section." Medtronic, for its part, proposed as an alternative construction to

"pushrod" the "first proximal part of a multipart guide extension catheter that is materially more rigid than and pushes the flexible tubular part within the guide catheter." ECF No. 603 at 10.

LEGAL ANALYSIS

In general, the court's role at claim construction "is not to redefine claim recitations or to read limitations into the claims to obviate factual questions of infringement and validity but rather to give meaning to the limitations actually contained in the claims." *Am. Piledriving Equip., Inc. v. Geoquip, Inc.*, 637 F.3d 1324, 1331 (Fed. Cir. 2011). To determine the meaning of the claims, courts consider both intrinsic and extrinsic evidence. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005).

Intrinsic evidence includes the language of the claims, the specification, and the prosecution history. *See id.* at 1314–17. The claims themselves "provide substantial guidance as to the meaning of particular claim terms," and "the context in which a term is used in the asserted claim can be highly instructive." *Id.* at 1314. The meaning of the words of a claim are typically "their ordinary and customary meaning," but the ordinary meaning in a patent context is the meaning that a "person of ordinary skill in the art" would assign to the words at the time of the invention after reading the entire patent, including the specification and the prosecution history. *Id.* at 1312–13 (citations omitted).[6]

[6] Here, the parties agree that a person of skill in the art is "(1) a medical doctor who had completed a coronary intervention training program and had worked as an interventional cardiologist; or (2) a person with an undergraduate degree in engineering (such as mechanical or biomedical engineering) with three years' experience designing

The specification "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Id.* at 1315 (citation omitted). In analyzing the specification, courts consider the disclosed embodiments of the claimed invention but must be sure not to import limitations from the specification into the claims. *See id.* at 1323 ("[S]ection 112 of the Patent Act requires that the claims themselves set forth the limits of the patent . . . because persons of ordinary skill in the art rarely would confine their definitions of terms to the exact representations depicted in the embodiments."). Patent claims generally should be construed to encompass preferred embodiments because "a claim interpretation that excludes a preferred embodiment is rarely, if ever, correct." *On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1138 (Fed. Cir. 2004) (internal quotation marks omitted) (citation omitted). But that a particular embodiment is preferred is not, by itself, sufficient to justify limiting an otherwise broad claim to the preferred embodiment. *See, e.g.*, *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004) ("[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.").

The prosecution history "can often inform the meaning of the claim language by demonstrating how the inventor understood the invention" because it "consists of the

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medical devices, including catheters or catheter-deployable devices." Invalidity Order, 2024 WL 95193, at *1.

complete record of the proceedings before the [Patent and Trademark Office] and includes the prior art cited during the examination of the patent." *Phillips*, 415 F.3d at 1317. But it is often "less useful for claim construction purposes" because it represents the act of negotiation. *Id.*

Extrinsic evidence is, essentially, everything else, and "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996).

Ultimately, the language of the patent claims "must be precise enough to afford clear notice of what is claimed." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 909 (2014) (quoting *Markman*, 517 U.S. at 373). If the patent claims, "read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention," the patent is invalid for indefiniteness. *Id.* at 901.

The Court applies the law of the Federal Circuit for patent questions. *Int'l Bus. Machs. Corp. v. Zillow Grp., Inc.*, 50 F.4th 1371, 1377 (Fed. Cir. 2022). Nowhere is this more relevant than here, where the Federal Circuit has weighed in directly on how the Court is to proceed.

I. Claim Construction of Substantially Rigid Portion

The parties largely propose the same definitions to this Court that they have previously. *See generally* Invalidity Order, 2024 WL 95139, at *3–5. But unlike before, this Court now has the guidance of the Federal Circuit.

As noted, there are three fundamental holdings from the Federal Circuit that ultimately dictate the Court's adoption of Teleflex's proposal. First, it is error to determine, at this stage, that the claims are "mutually exclusive" because claims do not have to be "totally consistent" and "[t]he art of claiming sometimes involves drafting claims in a variety of ways." Appellate Decision, 117 F.4th at 1369–70. Thus, instead of applying a given construction to each claim and determining whether the claims can coexist, the Federal Circuit instructs the Court to conduct claim construction on a "claim-by-claim basis." *Id.* at 1370.

Second, and of critical importance here, the Federal Circuit instructs that "substantially rigid portion" is a functional limitation, not a structural one. *Id.* This means that the Court's ultimate construction should define the phrase with regard to what it does, not where it is or what it is made of. The Federal Circuit even provided the function: "the substantially rigid portion is a portion of the catheter that is substantially rigid enough to achieve some function . . . in this case, the function of allowing the device to be advanced within the guide catheter." *Id.* In so doing, and in conjunction with its holding that the claims are allowed to be mutually exclusive, the Federal Circuit explained that a functional definition allows some claims to require the side opening be within the substantially rigid portion and some to require it be separate from the substantially rigid portion because "[n]o matter if the side opening is within or distal to the substantially rigid portion/segment, that portion/segment of the catheter must maintain . . . the function of allowing the device to be advanced within the guide catheter." *Id.*

Finally, the Federal Circuit advises that the ultimate mapping of the substantially rigid portion can be done on a claim-by-claim basis, but that the construction of substantially rigid portion must "be construed the same way across the patents." *Id.* This is achieved by applying the same definition across claims and allowing "a person skilled in the field . . . to measure the boundary, claim-by-claim." *Id.* at 1370–71.

Teleflex's proposed construction is the only one that adheres in all respects to the Federal Circuit's guidance. First, it defines the substantially rigid portion by its function, not its structure. Indeed, it clarifies that the substantially rigid portion is "rigid enough to allow the device to be advanced within the guide catheter," which is imported nearly verbatim from the Federal Circuit's decision.[7] *Compare* ECF No. 574 at 4, *with* Appellate Decision, 117 F.4th at 1370. Second, Teleflex's proposal is equally applicable across all claims or at least can be applied to all claims. Thus, the Federal Circuit's clear instruction that the substantially rigid portion be mapped on a "claim-by-claim basis" is satisfied. *Id.* at 1370–71 ("The claims themselves indicate to a person skilled in the field how to measure the boundary, claim-by-claim."). Finally, even though Teleflex's proposal might still lead to one GEC infringing mutually exclusive claims in a manner that gives the Court pause, the Federal Circuit clearly explained that should not factor into the Court's construction itself. *Id.* at 1371 (explaining that "to the extent Medtronic objects to a functional

[7] It also tracks the construction of "substantially rigid" that Chief Judge Schiltz provided in *QXMédical. QXMédical, LLC*, 2018 WL 5617568, at *5 ("'[S]ubstantially rigid' should be defined in the patents-in-suit as 'rigid enough to allow the device to be advanced within the guide catheter.'").

understanding of this limitation that would allow the same device to infringe claims that measure the boundary differently, we find that position premature at the claim construction stage").

The Court recognizes that Teleflex's original proposal to this Court—"a longitudinal section that is rigid enough to allow the device to be advanced within the guide catheter," ECF No. 574 at 13—would potentially encompass the entire device because the entire GEC is necessarily rigid enough to advance the rest of the GEC through the catheter. Invalidity Order, 2024 WL 95193, at *3. This Court, according to the Federal Circuit, however, need not precisely define where the rigid portion ends. It is clear from the patents themselves that the substantially rigid portion is one part of a GEC, not the entire GEC. The patents clearly describe a multi-portion device including a tip portion, a reinforced portion, *and* a substantially rigid portion. To better reflect that understanding, the Court accepts Teleflex's alternative proposal to substitute "a longitudinal section" with "the first proximal section of a multipart guide extension catheter." ECF No. 602 at 9. Ultimately, the Court agrees that the only plausible definition in light of the Federal Circuit's decision is "the first proximal section of a multipart guide extension catheter that is rigid enough to allow the device to be advanced within the guide catheter." That definition is functional, is equally applicable to all claims, and reflects that the substantially rigid portion is one discrete and identifiable part of the GEC. Crucially, it comports with the Federal Circuit's guidance.

Medtronic's proposal that substantially rigid portion is the "pushrod that pushes the flexible tubular structure through the guide catheter," ECF No. 576 at 3, a position it has advanced for years, suffers from the same flaws identified by Chief Judge Schiltz,

Invalidity Order, 2024 WL 95193 at *4–5, and *also* fails to adhere to the Federal Circuit's guidance. First and foremost, "pushrod" (as far as the Court understands Medtronic's position) is a structural term, in that Medtronic urges the Court to define substantially rigid portion by what it is, not by what it does. This clearly runs afoul of the Federal Circuit's mandate that "substantially rigid portion" is a functional limitation. Appellate Decision, 117 F.4th at 1370. Medtronic's attempt to comport with the Federal Circuit's functional mandate by tweaking its definition to include that the pushrod "pushes the flexible tubular structure" does not save it, as even this inserts structural terms into what must be a functional definition. *See id.* Further, Medtronic's definition continues to suffer from a lack of definiteness itself, even as a structural term. Indeed, Medtronic still provides no concrete definition of "pushrod." Invalidity Order, 2024 WL 95193 at *4 (noting that Medtronic failed to "clarify what it means for a portion of a device to 'act as a pushrod,' since *every* portion of the device—except whatever portion makes up the far distal end of the device—'pushes' some other portion of the device" and that "the next dispute would be over how to define 'pushrod.'"). Thus, Medtronic's assertion that its definition "allows a reliable and consistent identification of the substantially rigid portion," ECF No. 588 at 3, is simply wrong.

While the Court held true to its word that it did not construe the parties' supplemental briefing as conceding or waiving each party's preferred construction, and considered all proposed constructions, ECF No. 597 at 2, the supplemental briefing was nevertheless instructive. The Court had the benefit of a proposed construction (two, actually) from an expert, which it hoped might provide the right construction. But both

parties were in substantial agreement that the expert's proposed construction was not viable. First, the expert's proposed construction conflicts with the Federal Circuit's opinion because it is structural, not functional. ECF No. 602 at 2–3; ECF No. 603 at 4. That construction also conflicts with the Federal Circuit because it specifies the boundary of the "substantially rigid portion," ECF No. 602 at 4–8; ECF No. 603 at 4–5, whereas the Federal Circuit held that the "boundary of the 'substantially rigid portion' does not have to be consistent across claims," Appellate Decision, 117 F.4th at 1370. And, ultimately, the expert's proposed construction cannot be used for all claims as it would render some claims nonsensical. ECF No. 602 at 4; ECF No. 603 at 5–6. Equally, the parties' supplemental briefing made clear that the Court's modified construction was also unavailing. That construction fatally smuggled in a structural construction as well.

Ultimately, the Court must make a choice between competing proposals from the parties and that of an expert rejected by both parties. While neither proposal from the parties is perfect, Teleflex's proposal finds significant support from the Federal Circuit's decision (and this Court's earlier construction in the related *QXMédical* case, 2018 WL 5617568, at *5). The same cannot be said of Medtronic's proposal. That difference wins the day.

CONCLUSION

Based on the foregoing, and on all of the files, records, and proceedings herein, the Court construes "substantially rigid portion" as "the first proximal section of a multipart guide extension catheter that is rigid enough to allow the device to be advanced within the guide catheter."

Further, having reviewed the parties' positions on a schedule for the remaining stages of this case, the Court orders the following:

1. Initial expert disclosures and reports are due no later than July 25, 2025;
2. Rebuttal expert reports are due no later than August 22, 2025; and
3. All expert discovery should be completed, and corresponding motions filed, no later than September 19, 2025.
4. The Court will revisit dispositive motion deadlines after expert discovery has been completed and any motions have been filed.

Dated: June 27, 2025

s/Laura M. Provinzino
Laura M. Provinzino
United States District Judge